the fluorescent dye groups from dye stacking or dimerizing, thereby producing an at least 10-fold increase in fluorescence intensity over that of the quenched dye groups thereby indicating the presence of said enzyme, wherein the emission wavelength of the fluorescent dye groups is at or above 570 nm.

C1 (cancel)

12. (thrice amended) A protease substrate comprising a flexible peptide and including two identical fluorescence dye groups that are drawn together by free energy attractions so as to self-quench fluorescence of the dye groups by intramolecular dimerization or stacking and which, when separated, fluoresce at an at least 10-fold increase in fluorescence intensity over that of the quenched dye groups, wherein the emission wavelength of the fluorescent dye groups is at or above 570 nm.

C2 Sub D2

21. (thrice amended) An assay method of detecting a microorganism, which microorganism produces a characteristic enzyme, comprising:

Sub D3

C3

a) providing an enzyme substrate specific for said characteristic enzyme produced by said microorganism comprising two or more identical fluorescence dye groups bound to a flexible peptide comprising one or more bonds cleavable by said characteristic enzyme, the dye groups being drawn together by free energy attractions such that the dye groups self-quench their fluorescence by dye dimerization or stacking, and

b) cleaving one or more of said cleavable bonds of the peptide by said characteristic enzyme to release the fluorescence dye groups from dye dimerization or stacking, thereby producing an at least 10-fold increase in fluorescence intensity over that of the quenched dye groups thereby indicating the presence of said microorganism, wherein the emission wavelength of the fluorescent dye groups is at or above 570 nm.

A version of the claims showing the changes made is attached hereto.